PRACTICE ABSTRACT NO. 20

White clover: a well-adapted species for living mulches

Problem

Several species of living mulch can be used. It is important to know them well to use them wisely.

Solution

A good knowledge of the characteristics of white clover is essential to control its management and benefit from the cropping system.

Outcome

Applied research has led to better understand the interactions of white clover with its environment.

Picture 1: White clover (Arvalis)

Applicability box

Geographical coverage
Europe
Application period
All year
Required time
-
Period of impact
Continuous
Equipment
Not specific

Practical recommendations

There are a few characteristics to be aware of before implementing a white clover living mulch:

- This fodder plant with a fibrous root system is perennial (4-5 years).
- Seed cost is moderate : 3 kg/ha
- Adapted to humid or acidic soils **(Table 1).**
- Low vigour, increasing the risk of getting an unclean cover crop when established alone.
- There are several types of white clovers; **Dwarves**, small leafed and prostrate.
    - Short and slow implementation, but still competitive with the crop as it forms a very dense network of stolons**.**
    - **Intermediate or Hollandicum type**, with medium sized leaves and petioles.
    - **Giant clovers or Ladino**, with large leaves and long petioles with a less dense network of stolons.
- Its size limits interference with harvesting
- Often suffers from very dry conditions experienced in summer. During mild falls, it must be regulated in winter cereals **(Table 2).**
- It is rather easy to control as sensitive to herbicides, in particular to "sulfo" as well as to the lack of light **(Table 3)**.
- As a false host species of the Branched broomrape, it contributes to reduce the grain stock.

Table 1. Adaptation to soil types

Deep, healthy and undrained soil	Very well adapted
Fairly healthy, drained soil	Well adapted
Undrained hydromorph soil	Adapted
Acidic drying soil	Adapted
Limestone drying soil	Adapted

Table 2. Growth dynamics according to the season

Competition period		Comments
Winter	Low growth/ competition	
Spring	Very strong growth/ competition	Cover crop lower than the others but it is very dense root network can be very competitive
Summer	Significant growth/ competition	Cover crop very sensitive to lack of water
Fall	Very strong growth/ competition	Very aggressive mild fall

Table 3. Ease of chemical control

In rapeseed	Easy
In wheat	Quite difficult
In maize	Quite difficult

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Practical testing/Farmers' experiences

White clover can be part of any crop rotations but be vigilant with crops sensitive to Aphanomyces and in this case prefer resistant varieties of white clover : Aberdaï, Aberace, Giga, Lune de Mai, Tara.

Further information

- Trèfle blanc : http://www.fiches.arvalis-infos.fr/couverts/fiche_couvert.php?mode=fc&type_couv=pures&id_couvert=505
- Quelles légumineuses pourpréserver l'état sanitaire des sols ? Arvalis et Terres Inovia infos – juin 2017 www.terresinovia.fr/documents/20126/157418/ATII_aphanomyces__2017.pdf/8714f74b-9a3e-fefe-e477-4a92a7048373?t=1553704956785
- www.herbe-book.org/varietes/trefle-blanc
- Webpage: https://www.remix-intercrops.eu/
- Wiki: http://vm193-134.its.uni-kassel.de/En.DiversiWiki/index.php/Mixture_practice_for_farmers_and_advisors
- Facebook Page: https://www.facebook.com/RemixIntercrops/
- Check the Organic Farm Knowledge Platform for more practical recommendations.

About this abstract

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ReMIX is a H2020 multi-actor project that will allow designing cropping systems based on agro-ecology for the benefit of farmers and the whole EU agricultural community. ReMIX will exploit the benefits of species mixtures to design more diversified and resilient agro-ecological arable cropping systems. Based on a multi-actor approach, ReMIX will produce new knowledge that is both scientifically credible and socially valuable in conventional and organic agriculture. The project will tackle practical questions and co-design ready-to-use practical solutions. The project will span from the specification of end-user needs and the co-design of in-field and on-farm experiments to demonstrations with evaluation of new varieties and practices. ReMIX will contribute to the adoption of productive and resilient agricultural systems. The project is running from May 2017 to April 2021

Website: www.remix-intercrops.eu

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